

APR. 12. 2006 3:10PM

DUPONT BMP 25

Rev.3/94

RECEIVED  
CENTRAL FAX CENTER

NO. 4138 P. 3

APR 12 2006

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN THE APPLICATION OF:

**DANIEL DAVID LECLOUX ET. AL.**

CASE NO.: UC0213 US NA4

APPLICATION NO.: 10/612,482

GROUP ART UNIT: 1774

FILED: JULY 02, 2003

EXAMINER: YAMNITZKY, MARIE ROSE

CONFIRMATION NO.: 3485

FOR: ELECTRONIC DEVICES MADE WITH ELECTRON TRANSPORT AND/OR ANTI-QUENCHING LAYERS

RESPONSE TO NOTICE OF  
NON-COMPLIANT AMENDMENT  
37 C.F.R. § 1.121

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

In response to the Notice of Non-Compliant Amendment mailed March 9, 2006.

In compliance with said Notice, Applicants resubmit a portion of their Amendment of December 6, 2005 pertaining to three paragraphs of the Specification which are fully identified below.

Please amend the final (partial) paragraph on page 6, beginning on line 34 and continuing to page 7, line 8 as follows, the amendment to be entered on page 6, lines 35-36, as set forth below:

"Figure 2 shows the schematics of the energetics of the devices, which will be used for the discussion below. All of the energy levels are referenced to the vacuum level, [[117]] 170, with an energy defined to be zero. As such, they are all negative numbers. The lowest unoccupied molecular orbital (LUMO) energy level of the ET/AQ layer is defined as E<sub>1</sub>. The LUMO of the photoactive layer is defined as E<sub>2</sub>. The work function of the cathode is defined as E<sub>3</sub>, the highest occupied molecular orbital (HOMO) of the photoactive layer is defined as E<sub>4</sub>, and the HOMO of the ET/AQ layer is defined as E<sub>5</sub>. Higher energy means the energy level is closer to the vacuum level. These energy levels can be measured in the solid state by techniques such as photoelectron spectroscopy. One can also use cyclic voltammetry measurement in solution to measure the relative energy levels of the molecule."

Application No.: 10/612,482  
Docket No.: UC0213USNA4

Page 2

On page 8 of the Specification, please amend the second full paragraph, lines 21-27, at lines 27-28 as follows:

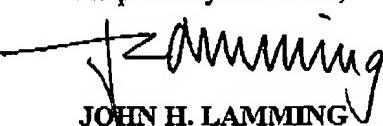
"In criteria 3, to prevent significant electron transfer quenching to occur, the LUMO level of the ET/AQ layer has to be high enough such that the electron transfer rate from the photoactive layer to the ET/AQ layer is significantly less than the excited state radiative decay rate of the exciton. So the optimal location of the LUMO level depends on the reorganization energy  $\lambda$  and overlap integral  $\alpha$  of the electron transfer reaction involved, and the radiative lifetime of the exciton of the photoactive layer. Typically, this requires  $E_1-E_2>-1\text{ eV}$ . Preferably,  $E_1-E_2>0$ ."

Also on page 8, please amend the third (final) paragraph, lines 29-36, at line 35 as indicated below:

"In criteria 4, similarly, the HOMO level of the ET/AQ layer has to be low enough such that the electron transfer rate from the ET/AQ layer to the luminescent layer is significantly less than the excited state radiative decay rate of the exciton. The optimal location of the HOMO level depends on the reorganization energy  $\lambda$  and overlap integral  $\alpha$  of the electron transfer reaction involved, and the radiative lifetime of the exciton of the photoactive layer. This usually requires  $E_4-E_5>-1\text{ eV}$ . Preferably,  $E_4-E_5>0$ ."

Please charge the fee applicable for a one month extension of time, 37 C.F.R. §1.17(a)(1) within which to file this paper as authorized by 37 C.F.R. §1.136(a) to Deposit Account 04-1928 (E. I. du Pont de Nemours and Company).

Respectfully submitted,

  
JOHN H. LAMMING  
ATTORNEY FOR APPLICANTS  
Registration No.: 34,857  
Telephone: (302) 992-5877  
Facsimile: (302) 892-1026

Dated: April 12, 2006